

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1 (original): An apparatus for adjusting a sampling phase of a digital display, comprising:

a phase locked loop (PLL) circuit unit for converting a frequency of a sampling clock signal and outputting a converted frequency, the sampling clock signal for converting an analog video signal into digital format;

an analog to digital converter (ADC) for converting an incoming analog video signal into digital format using the sampling clock signal input from the PLL circuit unit to output a converted video signal;

a detection unit for detecting in a predetermined region a maximum phase shift of the converted video signal; and

a control unit for controlling the PLL circuit unit so that the sampling phase can be adjusted in accordance with the maximum phase shift detected by the detection unit.

2 (original): The apparatus of claim 1, wherein the detection unit detects a number of phase shifts exceeding a predetermined reference level within the predetermined region, and when determining the number of phase shifts to be equal to, or greater than a predetermined value, detecting the maximum phase shift in the predetermined region.

3 (original): The apparatus of claim 1, wherein the detection unit comprises:

a comparator that detects whether the converted video signal is varied to, or above a predetermined reference level based on the comparison between the converted video signal from the ADC and the reference level;

a counter that detects the maximum phase shift by counting an output signal from the comparator; and

a reference setting unit that inputs the predetermined reference level to the comparator for the comparison with the converted video signal.

4 (currently amended): The apparatus of claim 1, wherein the control unit, ~~determining based on a signal output from the detection unit that the number of phase shifts exceeding the predetermined reference level is below the predetermined value~~, controls the detection unit to detect the maximum phase shift in another detection region based on a signal output from the detection unit indicating that the number of phase shifts exceeding the predetermined reference level is below the predetermined value.

5 (original): The apparatus of claim 1, wherein the detection unit adjusts the sampling phase by computing one of 50% and 75% phases of entire checking region with respect to the maximum phase shift in accordance with a characteristic of the converted video signal.

6 (original): A method for adjusting a sampling phase of a digital display, comprising the steps of:

- a) converting an incoming video signal in a predetermined region into a digital format to output a converted video signal, and analyzing the converted signal;
- b) determining whether a phase shift in the converted video signal analyzed in step a) varies at or above a predetermined level, and occurs more frequently than a predetermined value;
- c) if the phase shift is determined to have occurred more frequently than the predetermined value, detecting a maximum phase shift of the predetermined region; and
- d) adjusting the sampling phase in accordance with the maximum phase shift detected in step c).

7 (original): The method of claim 6, wherein, if the phase shift exceeding the predetermined reference level is determined to have occurred less frequently than the predetermined value, changing a phase shift detection region, and returning to the step a).

8 (original): The method of claim 6, wherein, after completion of the automatic sampling clock within the predetermined region, the step c) detects a maximum phase shift of the input signal while moving phase of pixel.

9 (original): The method of claim 6, wherein the step d) adjusts the sampling phase by computing one of 50% and 75% phases of entire checking region with respect to the maximum phase shift in accordance with a characteristic of the converted video signal.

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10 (new): The apparatus of claim 1, wherein the detection unit receives the converted video signal from the ADC.

11 (new): The apparatus of claim 1, wherein the predetermined region is a region in the converted video signal.